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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,737	03/23/2004	Noriya Hayashi	080542-0165	4615

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FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

GRAY, JILL M

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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09/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,737	HAYASHI ET AL.	
	Examiner	Art Unit	
	Jill Gray	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 7-42, 44, 47, 49 and 50 is/are pending in the application.
- 4a) Of the above claim(s) 7-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 44, 47, 49 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Pursuant to the entry of the amendment of April 21, 2009, the status of the claims is as follows: Claims 1, 3-6, 43, 45-46, and 48 have been cancelled. Claims 2, 7-42, 44, 47, and 49-50 are pending. Claims 7-42 are withdrawn. Claims 2, 44, 47, and 49-50 are under prosecution.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 2, 44, 47, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blenner et al., 4,738,999 in view of Snyder et al., 3,133,905 (Snyder), for reasons of record.

Blenner discloses a fiber reinforced composite comprising a matrix resin composition containing a bifunctional and/or trifunctional isocyanate and a polyol, and a fibrous material, wherein the polyol can have a molecular weight within the instant claimed range and the matrix, per claims 2 and 50. In addition, Blenner teaches that polyether diols can be used, although silent as to polypropylene glycol. In this concern, it is the examiner's position that the selection of polypropylene glycol is a preferential selection of one polyether diol from among many being selected for its' art recognized purpose. Accordingly, in the absence of factual evidence to the contrary, of patentably distinct, superior or unexpected properties of the resultant prepreg, wherein said properties are directly related to the specific polyether diol, this selection is not construed to be a matter of invention. In the alternative, Snyder teaches the formation

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of polyether glycols useful in making polyurethane rubbers, said polyether glycols having a molecular weight of about 250. See entire document, and for example column 1, lines 9-40. In addition, Snyder teaches that polyether glycols that are propylene based or tetramethylene based can be produced and are suitable. Note column 2. Also, Snyder discloses in Example 3 a polymer that contains greater than 50% polypropylene glycol, as required by claim 2. Blenner and Snyder each teach the formation of polyurethane matrix compositions comprising an isocyanate and a polyol, wherein the polyol is the same as or substantially similar to that contemplated by applicants. Each teaches that the polyol is a polyether glycol, wherein Snyder additionally teaches that a propylene based glycol or trimethylene based glycol can be used with a reasonable expectation of success. It would have been obvious to one having ordinary skill in the art to modify the teachings of Blenner by using as the polyether diol a polypropylene glycol as taught by Snyder with the expectation of forming an elastomeric polyurethane matrix composition having improved low temperature properties. Blenner discloses that the matrix can be cured at temperatures within the present claimed range. This teaching would render obvious the requirement that the matrix have a T_g within said range. Also, Blenner teaches that chain extenders do not have to be present. Regarding claims 44 and 47-48, Blenner teaches curing the composition to form a fiber reinforced plastic. As to claim 49, Blenner teaches the same type of components as those contemplated by applicants in present claim 2, which has a curing temperature within the instant claimed range, accordingly, the examiner has reason to believe that the pot life and T_g can be substantially as claimed as well, in the

absence of factual evidence to the contrary. Applicants are invited to provide said evidence. See entire document, in particular abstract, column 3, line 29-56, column 2, lines 17-37 and 64-68 and column 5, lines 18-27. Blenner does not specifically teach a molar ratio as a functional group of liquid isocyanate to polyol within the claimed range. In this regard, it is the examiner's position that since the result sought and the ingredients used were known, it was within the expected skills of one having ordinary skill in this art to arrive at the optimum proportion of those ingredients. *In re Reese*, 129 USPQ 402 (CCPA 1961).

Therefore, the combined teachings of Blenner and Snyder would have rendered obvious the invention as claimed in present claims 2, 44, 47, and 49-50.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 2, 44, 47, and 49-50 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 10/492,940. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the present invention fully encompass claims 1-18 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

6. Applicant's arguments filed April 21, 2009 have been fully considered but they are not persuasive.

Applicants argue that Blenner explicitly teaches a molar ratio of 1:2 of polytetramethylene glycol and p-phenylene diisocyanate, which teaches away from "a bifunctional isocyanate and/or trifunctional isocyanate and a polyol at a molar ratio, as a functional group, of liquid isocyanate:polyol = 0.9 to 1.1:1.0," as recited in claim 2.

In this regard, applicants' claims are drawn to a product, wherein the end product is drawn to a prepreg of carbon fiber reinforced plastic comprising a matrix resin composition having a Tg of 70°C to 150°C and fibrous material containing carbon fiber. It is the end product that must be distinguished over the prior art. Presumably the claimed critical molar ratio results in a specific end product matrix material (e.g. polyurethane). However, the end product of the prior art appears to be the same as that contemplated by applicants, namely, carbon fiber reinforced plastic comprising a matrix resin composition having a Tg of 70°C to 150°C. There are no patentably distinguishing

characteristics of the present claimed prepreg from that of the prior art. Accordingly, the examiner's position is as set forth previously, namely that the skilled artisan during routine experimentation would modify and adjust the molar ratio for optimization purposes commensurate with the desired properties of the end product, such as degree of elasticity or rigidity.

Comments

7. The request in the Paper of July 26, 2005, for rejoinder of the non-elected process claims based upon In re Ochai has been noted. However, it is noted that process claim 7 is not commensurate with the product of claim 2.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fukami et al., 5,071,613 and Domeier 4,857,579 each teach polyurethane formed from an isocyanate and a polyol at a molar ratio within the instant claimed range.

9. No claims are allowed.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/
Primary Examiner
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jmg

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